

## MINES, MINING, COPPER STOCKS AND COPPER

**First Unit C. & A. Great New Smelter Will Blow in June 1--Is Triumph For Management and Company in Various Ways--Sacramento Hill Developing Both Concentrating and Smelting Ore Near Surface--Lowell 1,200 and 1,300 New Ore Body Shows Fine--Prospecting Below Gardner 1,000--Big Surface Enterprises**

**CALUMET & ARIZONA** Will blow in the first of its two great blast furnaces at the new smelter of the company at Douglas on June 2, practically inaugurating the service of the splendid plant on that date. Announcement that this would be possible and that all plans were completed to that effect, was made yesterday by General Manager John C. Greenway of the C. & A.

**THE MEANING** Of this announcement is large in several ways. In the first place it means that on June 2 Calumet & Arizona will begin coming into larger reduction facilities and from that time on will increase both its ore output and copper output in meeting the requirements of the new plant, built to accommodate the growing needs of the company in utilizing to the best advantage the ores it has available. Of as great importance, or even greater from the economic administration standpoint, is attendance of lower costs which the improved facilities and greater capacity of the new smelter will enable the company to enjoy in the output of its metal. These costs, due to the richness and kindly character of Warren district ores, have in the past touched the low in the copper producing divisions of the United States. Calumet & Arizona being generally conceded to produce copper cheaper than any other copper mining company in the country. The lowering of costs, the larger the earnings that may be diverted to development of the district; and to the pay rolls thus created, and to the reimbursement of investors with fair margin of interest added.

**OF IMPORTANCE** Aside from these features is a more or less personal equation entering into any consideration of the achievement of the new smelter and the development of the properties of Calumet & Arizona that has made demand for the larger facilities. This feature deals with the brilliant engineering and general direction of Mr. Greenway and his staff which has brought about the breaking in of the first unit of the new plant two months earlier than he originally promised to have it going. When the directors of the company received Mr. Greenway's first estimate on time and on cost of construction, both were considered too low, and had they come from a source in which the highest confidence did not prevail would have been promptly discarded as impossible. As it was, the directors frankly told Mr. Greenway that he had cut out for himself more than he could manage, in either time allowed or money expended. This impression prevailed until very recently, when it dawned upon all concerned that the general manager of the company would more than make good his voluntary promises as to both time and money expenditures. The extensions of congratulations from the east have since been in order and comment there has been free in regard to the high good fortune of C. & A. in possessing the ability in its management to deliver an unprecedented triumph in construction work in the Southwest.

**BLOWING IN** Of the No. 1 blast furnace on June 1 will be attended by dedicatory ceremonies of modest character but in which there will be plenty of enthusiasm. Attending will be directors and officers of the company from the east. With the starting of this furnace, the work necessary to completion of the 2 blast furnace will be attacked with double forces and it will be but a short time until it is going. Following this the balance of the smelter will be brought in rapidly, unit by unit, until the entire new plant is in full operation.

**CALUMET & ARIZONA AND S. & P.** In April had the banner month's production of the present and the banner month in the history of the companies with the exception of December last, when the production was in round figures about \$9,000 pounds in excess of April. The increase in April output over that of March was above 1,500,000 pounds. The gain is attributable to both higher grade shipments and to freer use of smelter facilities, which have necessarily been more or less cramped at times by reason of changes and construction interference in connection with erection of the great new smelter. During April there were improved working conditions, and these will be gained upon from now on. The higher price prevailing for copper output naturally encouraged larger call on the mines.

**THE RECORD** Of output of the old smelter for the joint companies tells an interesting story of immense copper output and of well managed business and of control of production in conformity with market conditions. The record in pounds is as follows:

Jan. ....	4,780,000	4,544,000	4,058,000	4,490,000
Feb. ....	4,050,000	3,432,000	3,270,000	3,888,000
Mar. ....	4,250,000	3,652,000	4,000,000	5,190,000
April ....	5,756,000	4,161,000	3,850,000	4,530,000
May ....		4,424,000	3,854,000	4,964,000
June ....		4,160,000	3,050,000	4,735,000
July ....		4,748,000	4,394,000	4,825,000
Aug. ....		4,514,000	4,650,000	5,080,000
Sept. ....		4,462,000	4,198,000	4,660,000
Oct. ....		4,404,000	4,784,000	4,685,000
Nov. ....		4,928,000	4,390,000	4,690,000
Dec. ....		5,840,000	4,486,000	4,175,000
Totals ....	55,198,000	49,784,000	54,805,000	

**AMONG LATE** Ore development features of the Warren District the Uncle Sam of the Copper Queen is providing much of note in the end on the A-300 level, where they have been opening in a copper body during the last six months and now have a splendid tonnage of excellent grade ore shown up. They have traversed about 250 feet along the Shattuck line in the ore, and are now stopping in it. The big body is one that the Shattuck is also in on its side of the line at a little higher level and is a very valuable possession.

**ANOTHER QUEEN** Ore body lately brought in and that is looking constantly better is that being opened on the 1200 and the 1300 levels

of the Lowell. This is also a good grade ore and now promises to exceed the best earlier expectations in extent and value.

**LIKE PLEASING** Improvement on expectations, in even stronger degree, is underfoot to be attending the important prospecting being carried on in connection with exploration of the low grade ore contents of Sacramento hill. That is, the expectation in the beginning was that this near the surface ore would prove low grade. Nothing else was looked for. But the Sacramento hill territory refuses to go exclusively into the low grade class, and a great deal more near the surface Warren district territory known to carry low grade ores may perform similarly when reached. On both the 100 and the 200 levels in the Sacramento hill work there has lately been found both smelting and concentrating ore. There is no longer question but that the territory will be mined with profit practically to the surface. This development is not only of value to the Copper Queen but also to the C. & A. in connection with the property it has adjacent to Sacramento hill and in which like conditions may be expected to prevail.

**SURFACE WORK** Of the Copper Queen is going along very satisfactorily in connection with all of the several large enterprises now in hand. The new ventilator fans for the Gardner shaft are here and it is expected will be running in three weeks. These fans will provide 50,000 cubic feet per minute and will greatly improve working conditions underground in the Gardner.

**A BIG DIVISION** Of Copper Queen mines is represented in the Gardner. It is one of the greatest copper domains in the country, and it is still far from at the maximum of its development in all likelihood. For a considerable period of years it was figured by smart people that the Gardner was limited in point of profitable productiveness to depth of 1,000 feet. Lately there has been a wine going in ore below the 1,000 and it now looks as if there was a fine body being entered. That Gardner is as likely to go as deep as any of them is not a bad bet. And the deeper this great property may go the more acceptable will be the big new air ventilation plant that it is now coming in possession of.

**THE NEW HOIST** At the Sacramento will be permanently in commission within a day or two. This powerful equipment was turned over on Wednesday and has since been breaking in. Rough edges here and there as common with all such equipment, ore being taken off and probably tomorrow the plant will have passed the final inspection and be ready for steady duty. It will be a decided aid in operations and welcome to all concerned. The new compressor parts are arriving at the power house. The foundation is in and the boilers bricked up. Setting up of the compressor will be under way very shortly.

**NEW CHANGE HOUSE** Construction of Copper Queen in the district is notable in its permanency of character and provision of the very best that is in use under modern scientific endorsement. It is also notable in point of the size of the buildings and the apparent preparation for the larger activities the future will bring. The first of these change houses, that at the Uncle Sam, went in commission recently, and the second, at the Atlanta, was opened during the week. The third, in course of construction for some time, is at the Sacramento and will be ready for use in about another month. The Sam and Atlanta are about the same size, having lockers for 150 men each. The Sacramento is much larger than both of these combined, having lockers for over 400 men.

**THE DESIGN FOLLOWED** For these change houses is a combination of the best features of German and French change houses erected after plans worked out by government scientists and the engineers of large coal companies in the two countries. Clothing removed coming from underground is suspended on chains in each locker. These chains automatically lift to the roof of the building, where free ventilation quickly dries out all moisture. Shower bath arrangements are present for each man. Buildings throughout are concrete finished. The concrete of the floor levels and all drainage is to the center, where it passes out of the building. The use of hose and good water pressure thus enables the speedy and thorough cleansing of not only the floors but also the walls and lockers of the buildings. Other sanitary arrangements are equally careful and thorough throughout the structures. Microbes have small chance, while the comfort provided for men making use of the facilities is the maximum attainable. Hot and cold water are always available, while an even temperature in all kinds of weather is attained through the heating and air cooling systems employed.

**SHATTUCK LINE** is a popular direction these days from various points of the compass. Higning Leasing Co. is going that way as rapidly as it can with its raise from the long tunnel. This raise is being pushed at the rate of about five feet a day. It is in ore which is apparently growing stronger in value. Also the vein being followed is increasing in size. Assays are reported to have shown \$3.50 silver during the week. The drift from the tunnel is now in about 60 feet. About 100 feet further on is the Uncle Sam drift of the Copper Queen, where is a known large body of silverlead ore.

**GREENE CANANEA** Situation at Cananea has improved very materially in the last week. A comfortable increase in mining operations was made, which means that reduction works activities will soon be enlarged. During the enforced close down of a part of the reduction division there has been opportunity for all overhauling that might be made to advantage, and this has been carried out by the mechanical department. With the resumption of divisions from time to time, the entire plant will come back to normal operations in splendid form, when the company may be relied upon for the largest and best work in its history, with output of more copper at less cost per pound than ever before in its history.

**THE MARKET** Continues a study in uncertainty. Every feature of the week in news development was favorable to the establishment of a basis for higher prices. Perhaps this was accomplished, through reaching rock bottom, but there is no assurance on that point. One marked feature of the last half of the week, however is worthy of special consideration, and that is the declaration of several eastern financial writers that the coppers at the present time afford better investment than the rails and most of the industrials, and the trend of all eastern writers on financial matters toward the same opinion. Coppers have never before enjoyed the preference they are now being shown.

**THE NEWS** Of the week, not excepting the Japanese and tariff matters, was all of bullish character. Though the tariff bill passed the house without elimination of features considered objectionable in financial circles, it is held in financial circles that the chances for its passage by the senate without important concessions are extremely small, with more than a little possibility that it will meet defeat as a whole. In the Japanese matter the negotiations since the return of Secretary Bryan mean protraction of the issue and every outlook for amicable and satisfactory settlement, with chances favorable in addition to retraction of the legislation in California through a referendum vote which democrats are urging as a test of strength of opposition to the Johnson good-bye administration, entirely outside of the main issue on the surface.

**COPPER PRODUCERS'** Statement was a particularly big bullish feature of the week, but strong as it was failed of stirring the activity that under normal market conditions should have been good for advance of several points for the stocks of all the established producing companies immediately on being made public. Nor can it be said under any construction that the news had been discounted by the market, for the discounting has been confined exclusively to the bad news side of the situation. The decrease of more than 28,000,000 pounds in the copper stocks of the country in the month of April was attended by increased production at the mines. Both home and foreign consumption of the metal offset the increase in output. Heavy shipments to Europe were taken up by the trade as fast as delivered and this is continuing. Consumers stocks, however, are not piling up. They are being worked off about as fast as taken on. The hand to mouth policy continues, with difference in comparison with some past periods that the consumers are in position where they are obliged to place orders in advance to meet actual contract requirements they are obliged to fill for future delivery. The producers are all sold in advance, some of them several months ahead.

**THE SITUATION** Could hardly be improved upon from the standpoint of the producers. It would be equally good in point of making advance in the stock values of producers, but for the time being it is evident that no hopes may be built in this latter respect. However, the market is at this time running over with excellent bargains in the copper list. No purchase based on established production can at this time fail of making big returns to the investor. It is merely a matter of holding for the ultimate upturn. Few believe that copper stocks will be bought below the present levels, but of this no one will venture assertion. All agree, however, that whether coppers do or do not go lower they are choice bargains at present figures. Stupid buy and hold. It may be a year, may be longer, but the day will arrive when the stocks purchased on this market will be worth from a quarter to three and more times the present price.

**PRESENT MATTER** With the market is simply that the investing public is waiting to see. It wants to know what is going to happen, not according to guess but by actual measurement of the cloth. If business is going to keep ahead despite tariff changes and other disturbing factors, as a great many believe, the investing public will move accordingly when that fact becomes patent. Meantime it appears fully determined to be shown.

**IN THE BARGAIN** List under this heading are Calumet & Arizona, Phelps-Dodge, Shattuck, Miami, Ray, Old Dominion, all in the Arizona group, Greene Cananea, Giron, Chino, Utah Copper, Nevada Con., Mason Valley, all in the Southwest, and all available at bargain prices. Inspiration, blocking out its ores and making ready for production toward the end of 1914, is another fine buy. No mistake will be made on any of them, and the range in present price is such a little of some one or other of the issues is available to practically everybody. Make a place in your trunk for a few certificates, and then forget them.

**UNITED VERDE EXTENSION** Reports from Superintendent Morgan say that they are now crosscutting an extensive quartz ledge encountered in the workings being run to the point where the new shaft will be sunk. Assays from samples show rich values in gold with a good showing of silver. The oxidized ore being encountered on the 800 foot level, the present workings are believed to overlay a high grade body of sulphides which will be opened from the new shaft. There is a considerable quantity of low grade oxidized ore on the 500 foot level and the encountering of the better grade ore on the 800 foot level is considered a very favorable development.

**RAY IS AN** Arizona copper mine that is winning the highest praise throughout the copper world because of splendid mine production and excellence of mechanical equipment operation. Messrs. Bartholomew and Skinner of Thompson, Towle & Co., and George L. Walker of the Boston Commercial on recent tours of the coppers producers expressed themselves while in Bisbee as finding in Ray operations the climax in new property achievements. Ray equipment, both in mines and reduction works, represents the last word of the world's most advanced engineers. The efficiency attained is commented upon only in superlative words of admiration by highly competent judges. The fine increase Ray has had in output of copper since its entry to production finds explanation in these comments, and as the ore resources of the property are equally praised by those in position to know, there is every reason to anticipate that this newest of the big Arizona producers is destined to deliver a great deal for those who have put money into its development.

**INSPIRATION** is keeping ahead with its work in manner that wins the esteem and confidence of conservative mining and business men.

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## HEADWAY GOOD AT EXTENSION

Pearce is the scene of considerable activity now. Buildings are being renovated and repaired and all hands are apparently making ready for a general revival of business and mining activity.

The new surface plant has been installed on the Commonwealth Extension, and the work of sinking the main shaft has begun in earnest. Superintendent Stallings has an excellent corps of men, most of whom are well known in Bisbee. Jim Hillman, for many years in the employ of the Copper Queen at Bisbee, is the foreman in charge, while Jack Mills, for many years with the Greene Cananea, has charge of the machinery and shops as master mechanic. There is no Mexican labor employed, and the fact that the Commonwealth Extension is to be a "white" camp entirely gives promise of making a town at Pearce that will take rank with the big camps of the country.

Aside from the work of sinking the main shaft on the Arthur, there will be considerable work done on the Annex No. 3 at the extreme south end of the group from where some rich ore was shipped in the early days of the camp; also on the Rainbow, where there is now a single compartment shaft 200 ft. deep, said to have cut good ore.

With the showing on the ground and the personnel of the management, there is the maximum of reason to look to the enterprise for that permanency and success. The concern is made up of local men entirely, not a dollar's worth of stock having been sold outside of Bisbee and immediate surroundings. Numbered among stock holders and officers are many of the best and most experienced miners in the district.

### GLOBE DISTRICT MINES.

**(From the Globe Record.)**  
The Old Dominion closed a very successful month's operations on Wednesday, and although the complete figures showing the smelter output are not yet available, we are informed that the production of copper was probably larger than during any month so far this year. Work in all other departments progressed in a satisfactory manner. All surface construction work has advanced. The new hoist at "A" shaft was installed and is now in commission. It is one of the most efficient mines hoists in Arizona. The foundation for the new air compressor in the smelter power house has been completed and it will be installed at once, the last car of machinery having been received. The compressor is of Northern manufacture, and its capacity is 5000 cubic feet. Construction of the concrete ore bins and the sampling mill has been completed. In the mine ore extraction and development have continued about normal, and the work of excavating the ship pockets on the 500 and 1200 foot levels is nearly finished.

### ARIZ. COMMERCIAL.

At the Arizona Commercial the Copper Hill shaft has reached a depth of 1030 feet and has only about 70 feet further to go to be down to the level of the Old Dominion 12th level, where sinking will probably be discontinued for a time and development confined to opening laterals. Drifting on the same ore is being encountered on the 7th level. The 8th level drift is being driven in country rock and crosscutting will be necessary to determine the position of the vein. Very little water is being encountered, as the Old Dominion pumps are draining the Arizona Commercial and United Globe territory.

### SUPERIOR - BOSTON.

The most important feature of the development in the mine of the Superior & Boston Copper company last week was the encountering of ore in the 10th level crosscut which apparently just entering the vein. Small strata of copper glance with particles of sulphide appeared in the face of the crosscut a week ago and these occurrences have increased and the formation also carries some carbonate ore. Friday the whole face was heavily copper stained. Crosscutting on the 11th level continues. The 8th level drift is still being driven in ore and shipments which formerly went to El Paso and were discontinued on account of the strike of employees there, are now going to the Old Dominion smelter. About fifty tons of ore is being shipped daily.

### MINING NOTES.

The National mill at Rawhide, Nevada, is to be rebuilt.  
The Daly West Mining company, of Park City, has passed its second dividend, and will keep the earnings in the treasury to take care of the extended development proposed.  
The Stock Oil company, drilling for the Midwest Oil company, which has a lease on the Stock ground at Casper, Wyoming, has just brought in another gusher, which has an estimated flow of 1,000 barrels a day.